

WASHINGTON AGRICULTURAL CHEMICAL USAGE SWEET CHERRIES

2003 Crop



U.S. Department of Agriculture
Washington Agricultural Statistics Service
P.O. Box 609, Olympia, WA 98507

August 2004

Sweet Cherries

Four states were surveyed for sweet cherries in 2003: California, Michigan, Oregon, and Washington. Surveyed acreage totaled 76,100 bearing acres. Washington was the second largest state surveyed behind California for sweet cherries and accounted for 34 percent of the acreage.

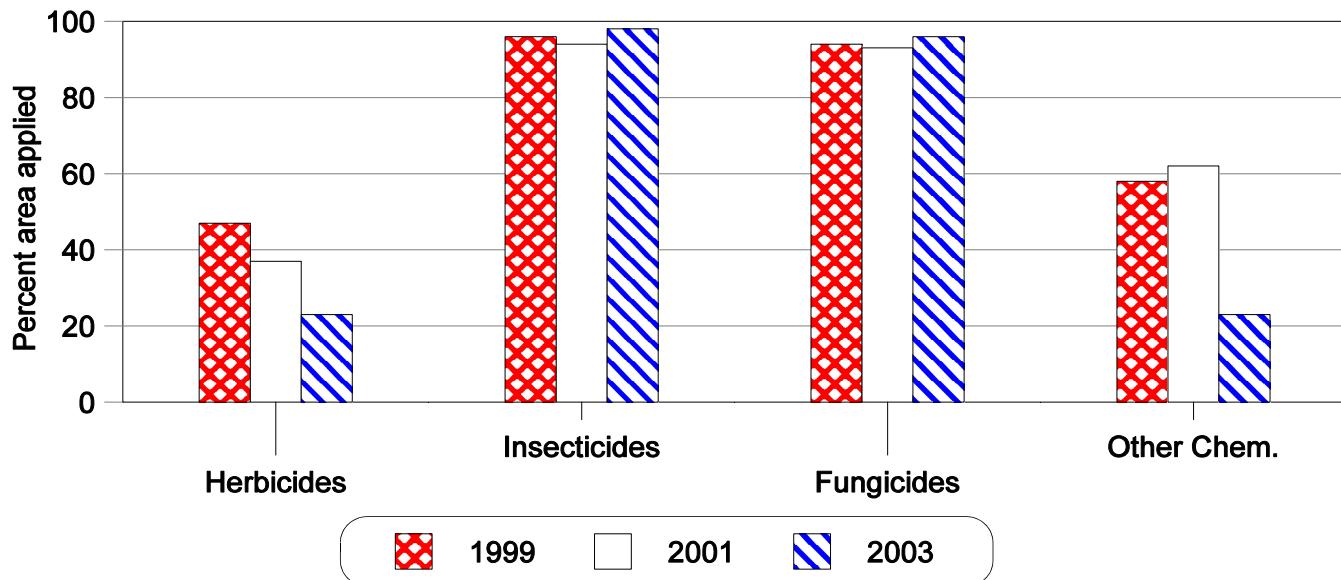
Sweet Cherries: Pesticide Applications, Bearing Acreage and Percentage Receiving Applications, Major States and Total, 2001 and 2003

State	Bearing Acreage		Area Receiving and Total Applied 1/							
			Herbicide		Insecticide 2/		Fungicide		Other Chemicals	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
Acres								Percent		
California	23,000	30,000	36	45	50	66	54	71	24	15
Michigan	7,400	8,100	60	33	99	82	99	91	70	20
Oregon	11,000	12,000	44	39	96	93	86	87	50	21
Washington	22,000	26,000	37	23	94	98	93	96	62	23
TOTAL	63,400	76,100	41	35	79	83	79	84	47	18

1/ Acreage in California includes nonbearing acres for 2001. Total applied may include applications of some active ingredients made only to non-bearing acres.

2/ Total Applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products

Sweet Cherries: Ag Chemical Applications, Washington



Sweet Cherries: Agricultural Chemical Applications, Washington, 2001 and 2003 1/

Active Ingredient 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
	Percent		Number		Pounds Per Acre		1,000 Lbs.			
Fertilizers:										
Nitrogen	-	84	-	2.9	-	20	-	59	-	1,288
Phosphate	-	39	-	2.5	-	9	-	22	-	224
Potash	-	37	-	2.7	-	7	-	19	-	184
Herbicides:										
2, 4-D	-	3	-	1.7	-	1.07	-	1.85	-	1.6
Glyphosate	26	19	1.7	2.0	1.15	1.17	2.03	2.42	11.8	12.0
Oryzalin	5	-	1.7	-	1.55	-	2.71	-	3.0	-
Oxyfluorfen	-	*	-	1.0	-	0.75	-	0.75	-	0.2
Paraquat	18	9	2.0	1.7	1.07	0.80	2.23	1.38	8.6	3.3
Insecticides:										
Azinphos-methyl	72	69	1.6	1.7	0.80	0.77	1.35	1.34	21.6	24.0
Bt (Bacillus thur.)	5	-	1.0	-	3/	-	3/	-	3/	-
Carbaryl	70	68	1.7	1.8	1.67	1.72	2.88	3.16	44.3	55.5
Chlorpyrifos	48	57	1.0	1.1	1.93	1.89	2.04	2.13	21.6	31.7
Diazinon	8	14	1.0	1.0	1.86	1.98	2.01	2.05	3.4	7.7
Dimethoate	17	23	1.0	1.0	0.98	0.91	1.04	0.95	4.0	5.8
Endosulfan	12	19	1.2	1.0	1.77	1.92	2.20	2.01	5.7	9.9
Imidacloprid	-	4	-	1.2	-	0.06	-	0.08	-	0.1
Malathion	40	36	1.9	2.1	1.07	1.17	2.07	2.54	18.3	24.1
Petroleum distillate	68	73	1.4	1.6	23.76	22.30	33.27	35.60	500.0	676.9
Propargite	-	4	-	1.6	-	1.45	-	2.33	-	2.3
Spinosad	36	46	1.2	1.7	0.08	0.09	0.10	0.15	0.8	1.8
Fungicides:										
Azoxystrobin	7	7	1.2	1.5	0.18	0.22	0.23	0.35	0.4	0.6
Basic copper sulfate	3	5	1.2	1.5	6.98	6.05	8.34	9.30	4.8	12.8
Calcium polysulfide	13	11	1.2	1.0	23.54	23.74	28.41	24.45	78.2	67.2
Copper chloride hyd.	3	-	2.2	-	5.45	-	12.01	-	7.8	-
Copper hydroxide	47	39	1.3	1.2	3.57	4.01	4.68	5.18	47.9	52.8
Copper sulfate	5	5	1.3	1.5	2.01	2.83	2.61	4.30	3.0	5.8
Fenarimol	-	19	-	1.4	-	0.08	-	0.11	-	0.5
Myclobutanil	76	59	1.9	1.6	0.12	0.13	0.24	0.21	3.9	3.3
Propiconazole	44	32	1.5	1.4	0.12	0.12	0.18	0.16	1.8	1.3
Sulfur	56	57	2.6	2.4	7.62	7.92	19.79	19.48	245.6	287.8
Tebuconazole	32	24	1.3	1.3	0.21	0.21	0.28	0.28	2.0	1.7
Thiophanate-methyl	-	6	-	1.3	-	0.96	-	1.28	-	2.1
Trifloxystrobin	-	8	-	1.7	-	0.10	-	0.17	-	0.3
Triflumizole	-	57	-	1.6	-	0.32	-	0.53	-	7.8
Other Chemicals:										
Cytokinins	2	11	1.1	2.4	5/	4/	5/	4/	**	**
Ethephon	-	2	-	1.0	-	0.30	-	0.30	-	0.1
Gibberellic acid	54	57	1.3	1.2	0.006	0.04	0.08	0.06	0.9	0.8
Methyl anthranilate	-	1	-	1.5	-	3.53	-	5.44	-	1.6

Note: Data may not multiply across due to rounding. * Area applied is less than 0.5 percent. ** Total applied is less than 50 lbs.

1/ Bearing acres in 2001 and 2003 for Washington were 22,000 acres and 26,000 acres respectively.

2/ Insufficient reports to publish data for the following agricultural chemicals: 2001; **Herbicides:** 2,4-D, 2,4-D, Dimeth.salt, Diuron, Napropamide, Norflurazon, Oxyfluorfen, Pendimethalin, Prosulfuron, Sulfosate. 2001; **Insecticides:** Abamectin, Benzoic acid, Clofentezine, Ethyl parathion, Fenbutatin-oxide, Formetanate hydro., Imidacloprid, Phosmet, Piperonyl butoxide, Potassium salts, Propargite, Pyrethrins, Pyridaben, Thiamethoxam. 2001; **Fungicides:** Bas copper zinc sulf, Benomyl, Captan, Chlorothalonil, Copper amm. complex, Copper oxychlo. sul., Copper resinate, Cresol, Dodine, Fenarimol, Fenbuconazole, Fosetyl-al, Kresoxim-methyl, Mancozeb, Maneb, Mefenoxam, Metalaxyl, Oxytetracycline, Potassium bicarbon., Streptomycin, Thiophanate-methyl, Triflumizole, Vinclozolin, Ziram. 2001; **Other Chemicals:** Aluminum phosphide, Benzyladenine, Butenoic acid hydro., Chlorophacinone, Diphacinone, Dodecadien-1-ol, Dodecanol, Ethephon, Garlic oil, Gibberellins A4A7, Harpin protein, Indolebutyric acid, Lactic acid, Methyl anthranilate, Monocarbamide dihyd., NAA, NAD, Prohexadione calcium, Strychnine, Tetradeanol, Zinc phosphide. 2003; **Herbicides:** 2,4-D, Dimeth. salt, Glyphosate diam salt, Napropamide, Oryzalin, Pendimethalin. 2003; **Insecticides:** Acetamiprid, Amitraz, Azadirachtin, Benzoic acid, Bt (Bacillus thur.), Clofentezine, Esfenvalerate, Ethyl parathion, Fenbutatin-oxide, Formetanate hydro., Methoxychlor, Phosmet, Potassium salts, Pyrethrins, Pyridaben, Pyriproxyfen, Rotenone. 2003; **Fungicides:** Bacillus subtilis, Benomyl, Captan, Chlorothalonil, Copper chloride hyd., Copper oxychlo. sul., Copper oxychloride, Copper resinate, Fenbuconazole, Fosetyl-al, Mancozeb, Mefenoxam, Oxytetracycline, Potassium bicarbon., Pseudomonas fluores., Pyraclostrobin, Streptomycin, Ziram. 2003; **Other Chemicals:** Aluminum phosphide, Dodecadien-1-ol, Harpin protein, Lactic acid, NAA, Prohexadione calcium, Strychnine, Zinc phosphide.

3/ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

4/ Rate per acre is less than 0.0005 lbs.

5/ Rates and total applied are not available because amounts of active ingredient are too small.

Sweet Cherries: Agricultural Chemical Applications, Major States, 2001 and 2003 1/

Active Ingredient 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
	Percent		Number		Pounds Per Acre				1,000 Lbs.	
Fertilizers:										
Nitrogen	-	79	-	2.0	-	29	-	58	-	3,507
Phosphate	-	34	-	1.7	-	20	-	35	-	924
Potash	-	37	-	1.7	-	31	-	54	-	1,524
Herbicides:										
2, 4-D	4	4	1.2	1.4	0.55	0.78	0.70	1.12	1.7	3.0
2, 4-D, Dimeth. salt	4	3	1.2	1.5	0.96	0.32	1.22	0.50	3.1	1.1
Diuron	-	1	-	1.1	-	0.22	-	0.24	-	0.2
Glyphosate	26	23	1.7	1.6	0.77	1.08	1.35	1.73	22.4	30.8
Napropamide	*	-	1.0	-	2.62	-	2.62	-	0.7	-
Norflurazon	1	1	1.3	1.1	1.50	0.83	1.96	0.96	1.8	0.8
Oryzalin	3	4	1.5	1.0	1.51	1.87	2.25	2.04	4.0	6.5
Oxyfluorfen	6	12	1.1	1.4	0.47	0.31	0.53	0.44	2.0	4.2
Paraquat	14	16	1.5	1.5	0.80	0.50	1.27	0.78	11.4	9.2
Pendimethalin	1	2	1.1	1.0	2.10	1.82	2.50	1.89	2.1	2.7
Simazine	2	3	1.0	1.0	1.30	0.69	1.33	0.71	1.9	1.6
Sulfosate	1	***1	1.4	1.3	0.83	0.93	1.22	1.29	0.8	1.0
Insecticides:										
Azinphos-methyl	37	56	2.1	1.9	0.67	0.40	1.40	0.77	32.8	33.1
Benzoic acid	-	3	-	1.0	-	0.12	-	0.13	-	0.3
Bt (Bacillus thur.)	10	7	1.2	1.0	3/	3/	3/	3/	3/	3/
Carbaryl	31	31	1.6	1.7	1.73	1.85	2.79	3.15	55.3	73.3
Chlorpyrifos	29	30	1.0	1.1	1.88	1.91	2.02	2.21	36.5	50.4
Clofentezine	3	7	1.0	1.0	0.15	0.12	0.16	0.13	0.3	0.7
Diazinon	8	10	1.1	1.1	1.61	1.57	1.88	1.76	9.7	13.0
Dimethoate	11	22	1.0	1.0	0.85	0.45	0.89	0.49	6.2	8.1
Endosulfan	5	12	1.2	1.0	1.69	1.12	2.07	1.17	6.1	10.8
Esfenvalerate	10	21	1.5	1.9	0.04	0.04	0.06	0.08	0.4	1.3
Fenbutatin-oxide	-	2	-	1.1	-	0.60	-	0.69	-	0.9
Imidacloprid	-	3	-	1.1	-	0.04	-	0.05	-	0.1
Malathion	-	40	-	3.1	-	0.52	-	1.66	-	50.4
Methidathion	1	-	1.1	-	1.26	-	1.46	-	0.9	-
Permethrin	6	25	1.8	1.8	0.13	0.01	0.25	0.02	1.0	0.4
Petroleum distillate	-	48	-	1.6	-	24.61	-	39.37	-	1,450.6
Petroleum oil	3	6	1.7	2.2	16.86	2.31	28.69	5.09	61.3	21.8
Phosmet	3	2	1.6	1.1	1.52	0.60	2.43	0.71	4.7	0.8
Propargite	*	18	1.0	1.1	1.80	1.14	1.80	1.34	1.0	18.2
Pyrethrins	*	-	6.3	-	0.07	-	0.07	-	**	-
Pyridaben	*	-	1.0	-	0.16	-	0.16	-	**	-
Spinosad	-	25	-	1.5	-	0.08	-	0.13	-	2.5

See footnotes at the end of the table.

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Sweet Cherries: Agricultural Chemical Applications, Major States, 2001 and 2003 1/(cont.)

Active Ingredient 2/	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
	Percent		Number		Pounds	Per Acre			1,000 Lbs.	
Fungicides:										
Azoxystrobin	4	3	1.2	1.5	0.20	0.23	0.23	0.35	0.5	0.9
Basic copper sulfate	2	4	1.1	1.3	5.62	3.92	6.39	5.24	7.1	15.7
Benomyl	6	2	1.3	1.1	0.66	0.40	0.90	0.45	3.3	0.7
Calcium polysulfide	6	7	1.2	1.0	28.09	26.86	35.87	28.67	146.6	158.2
Captan	5	5	1.6	1.4	1.73	0.87	2.85	1.28	8.5	4.7
Chlorothalonil	10	14	1.7	2.0	1.98	1.09	3.40	2.26	20.7	23.5
Copper chloride hyd.	1	-	2.1	-	5.39	-	11.49	-	7.9	-
Copper hydroxide	26	29	1.3	1.3	3.41	3.94	4.62	5.22	77.0	116.4
Copper oxychlo. sul.	1	***	1.1	1.0	3.85	0.88	4.46	0.92	4.0	0.6
Copper oxychloride	-	4	-	1.1	-	2.11	-	2.45	-	6.6
Copper sulfate	3	4	1.3	1.3	1.96	4.11	2.55	5.36	4.4	16.9
Dodine	1	3	1.3	1.1	0.69	0.26	0.94	0.30	0.7	0.6
Fenarimol	11	11	1.3	1.4	0.07	0.05	0.09	0.07	0.7	0.6
Fenbuconazole	10	10	2.8	1.7	0.08	0.09	0.22	0.16	1.4	1.1
Ferbam	4	29	2.3	2.6	1.96	0.20	4.67	0.52	12.9	11.5
Fosetyl-al	*	***	1.3	1.2	1.57	1.18	2.07	1.48	1.2	1.1
Iprodione	15	26	1.1	1.2	0.71	0.44	0.84	0.56	7.8	11.2
Mancozeb	*	-	1.0	-	2.74	-	2.76	-	0.4	-
Myclobutanil	37	29	1.7	1.5	0.12	0.13	0.21	0.20	4.9	4.4
Potassium bicarbon.	-	11	-	2.6	-	1.11	-	2.99	-	24.3
Propiconazole	25	17	1.6	1.3	0.11	0.12	0.18	0.16	2.9	2.1
Pyraclostrobin	-	15	-	1.4	-	0.11	-	0.16	-	1.8
Sulfur	36	35	2.9	2.5	6.42	6.95	19.02	17.97	429.3	476.6
Tebuconazole	26	32	1.9	1.5	0.17	0.17	0.33	0.26	5.5	6.3
Thiophanate-methyl	1	3	1.0	1.4	0.90	0.87	0.90	1.23	0.6	2.6
Trifloxystrobin	-	6	-	1.5	-	0.06	-	0.09	-	0.4
Triflumizole	-	29	-	1.6	-	0.30	-	0.49	-	10.6
Ziram	3	4	1.9	1.6	2.12	2.51	4.14	4.01	8.5	11.7
Other Chemicals:										
Chloropicrin	-	6	-	1.1	-	27.56	-	30.22	-	139.2
Cyanamid	3	8	1.1	1.2	1.26	0.68	1.47	0.84	2.5	5.1
Cytokinins	*	9	1.1	2.3	4/	5/	4/	5/	**	**
Ethepron	9	16	1.1	1.0	0.45	0.21	0.50	0.22	2.8	2.6
Gibberellic acid	32	36	1.4	1.2	0.05	0.05	0.08	0.06	1.5	1.7
Methyl anthranilate	*	1	1.5	1.3	1.76	1.52	2.75	2.12	0.2	2.0
Methyl bromide	-	7	-	1.0	-	62.04	-	67.78	-	356.7
Strychnine	*	5	1.0	1.9	0.01	0.005	0.01	0.009	**	**
Zinc phosphide	*	***	1.3	1.1	0.08	0.03	0.11	0.04	0.1	**

Note: Data may not multiply across due to rounding.

* Area applied is less than one percent. ** Total applied is less than 50 lbs. *** Area applied is less than 0.5 percent.

1/ Bearing acres in 2001 for the 4 major states were 63,400 acres. Bearing acres in 2003 for the 4 major states were 76,100 acres. States included both years were CA, MI, OR, & WA. Acreage in CA in 2001 includes nonbearing acres. Application of some active ingredients may refer only to nonbearing acres.

2/ Insufficient reports to publish data for the following agricultural chemicals: 2001; Herbicides: 2,4-DP, Dimeth. salt, Clethodim, Diuron, Fluazifop-P-butyl, Prosulfuron, Terbacil. 2001; Insecticides: Abamectin, Azadirachtin, Benzoic acid, Dicofol, Disflubenzuron, Ethion, Ethyl parathion, Fenamiphos, Fenbutatin-oxide, Formetanate hydro., Hexythiazox, Imidacloprid, Malathion, Methoxychlor, Oxythioquinox, Petroleum distillate, Piperonyl butoxide, Potassium salts, Spinosad, Thiamethoxam. 2001; Fungicides: Bas copper zinc sulf, Copper amm. complex, Copper oxide, Copper oxychloride, Copper resinate, Cresol, Cyprodinil, Kresoxim-methyl, Maneb, Mefenoxam, Metalaxyl, Oxytetracycline, PCNB, Potassium bicarbon., Streptomycin, Triadimenol, Trifloxystrobin, Triflumizole, Vinclozolin, Xylenol. 2001; Other Chemicals: Aluminum phosphide, Benzyladenine, Butenoic acid hydro., Chlorophacinone, Chloropicrin, Dichloropropene, Diphenacone, Dodecadien-1-ol, Dodecanol, Garlic oil, Gibberellins A4A7, Harpin protein, Indolebutyric acid, Lactic acid, Methyl bromide, Monocarbamide dihyd., NAA, NAD, Octadecadien (E, Z), Octadecadien (Z, Z), Prohexadione calcium, Sodium tetrahydrocarb, Tetradeanol. 2003; Herbicides: Acifluorfen, Bentazon, Dichlobenil, Glufosinate-ammonium, Glyphosate diam salt, Lactose, Napropamide, Sethoxydim, Terbacil, Triclopyr. 2003; Insecticide: Acetamiprid, Amitraz, Azadirachtin, Carbofuran, Dicofol, Ethyl parathion, Fenamiphos, Fenpropothrin, Formetanate hydro., Hexythiazox, Kaolin, Lambda-cyhalothrin, Methidathion, Methoxychlor, Piperonyl butoxide, Potassium salts, Pyrethrins, Pyridaben, Pyriproxyfen, Rotenone. 2003; Fungicides: Bacillus subtilis, Copper amm. Complex, Copper chloride hyd., Copper oxide, Copper resinate, Dicloran, Fenhexamid, Mancozeb, Mefenoxam, Oxytetracycline, Pseudomonas fluores., Streptomycin. 2003; Other Chemicals: Aluminum phosphide, Chlorophacinone, Diphenacone, Dodecadien-1-ol, E-8-Dodecenyl acetat, GABA, Harpin protein, Iron phosphate, L-Glutamic acid, Lactic acid, Metaldehyde, NAA, Prohexadione calcium, Z-8-Dodecanol, Z-8-Dodecen acetate.

3/ Rates and total applied are not available, amounts of active ingredient are not comparable between products.

4/ Rates and total applied are not available because amounts of active ingredient are too small.

5/ Rate per acre is less than 0.0005 lbs.